Instructions

for Installing *and* Operating

"NEW LIGHTNING" PHYSIO-THERAPY CABINET

Thorough Knowledge of Operation Assures Success

A. S. ALOE CO.

1819 Olive Street St. Louis, Mo.

"NEW LIGHTNING"
PHYSIO-THERAPY CABINET

This Book Contains:

Instructions for Operating
Pages 7 to 14

High Frequency Therapy
Pages 15 to 28

List of Accessories
Pages 29 to 43

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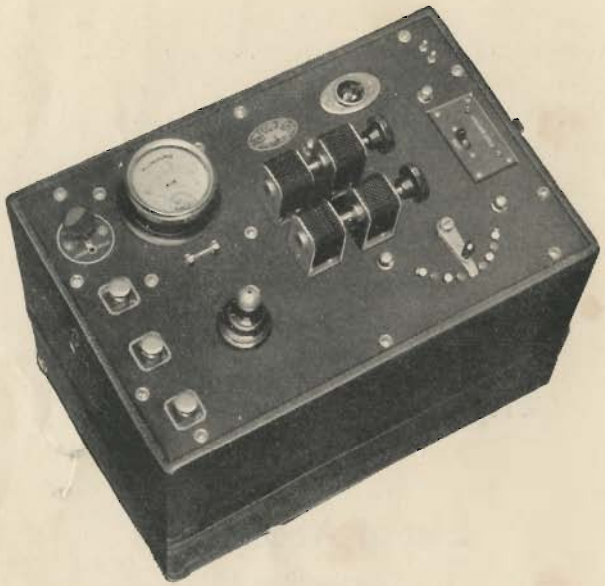


"NEW LIGHTNING"

The Aloe Electro-Therapeutic Portable Outfit

INSULATED HIGH FREQUENCY CORD

Made of a stranded copper conductor, covered with several layers of pure gum rubber. At one end is mounted a standard cord tip ($\frac{5}{32}$ inch), which will fit any of our machines, and on the other end is mounted a swivel clasp. Cord is very flexible.

A51	Heavy Cord, 4 ft. long	Price, $1.25
A51-5	Heavy Cord, 5 " long	" 1.40
A51-6	Heavy Cord, 6 " long	" 1.55
A51-7	Heavy Cord, 7 " long	" 1.70

Extra cable, 15c foot

EXTRA HEAVY INSULATED CABLE

Made similar to the A51 but with very heavy rubber insulation.

A83 Extra Heavy Protected High Frequency Cord, 5 ft. long ..... Price, $3.00

NEW IMPROVED DIATHERMY CORDS

Here are our much improved Diathermy Cords, covered only with pure gum rubber. They are very flexible, easily kept as clean as when new, and constructed to give long service. Ordinary Diathermy Cords are constantly getting wet, and when covered with a mercerized or silk webbing they are usually stained and discolored after but a few days' use.

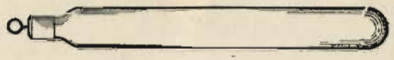
A1330 6 foot pair ..... Price, $2.50

BOOKS ON HIGH FREQUENCY TOPICS

A 650	"High Frequency Manual" by Noble M. Eberhart, M. D.	Price, $4.00
A1734	"Treatment of Gonococcal Infection by Diathermy" by E. P. Cumberbatch, M. D., and C. A. Robinson, M. D.	" 3.75
A1737	"Diathermy—Its Production and Uses in Medicine and Surgery" by Elkin P. Cumberbatch, M. D.	" 6.00
A1742	"Diathermy and its Application to Pneumonia" by Harry Eaton Stewart, M. D.	" 3.00
A1746	"Practical Electrotherapeutics and Diathermy" by G. Betton Massey, M. D.	" 6.50
A1750	"Diathermy in the Treatment of Genitourinary Diseases with Especial Reference to Cancer" by Budd C. Corbus, M. D., and Vincent J. O'Conor, M. D.	" 5.00
A1756	"High Frequency Practice" (Fourth Edition) by Burton Baker Grover, M. D.	" 6.00

GLASS VACUUM HANDLE

A53 Glass handle for indirect treating with the High Frequency Current .....Price, $1.25



INDIRECT TREATMENT HANDLES

A 54 Similar to A53, except that it is arranged to fit the A49 Shock Proof Handle. For Indirect Treating .....Price, 65c

A054 Same as A54, but made to fit the A049 Handle ..... " 65c

CHAIR PADS FOR AUTOCONDENSATION

Made with frame of five-ply veneered oak. On one side is mounted a layer of conducting metal covered with a dielectric of one-eighth inch black sheet fiber.

A410 Chair Pad .....Price, $10.00

A413 Flexible Chair Pad of approximately the same size and shape as No. A410, but made with a flexible electrode center of oiled silk and wool felt..Price, 10.00

HANDLES FOR AUTOCONDENSATION

A52 Handle 1 in. diameter by 9 in. long.....Price, $1.00
A81 Handle 1½ " diameter by 10 " long..... " 2.00
A58 Handle 1½ " diameter by 14 " long..... " 2.25

ROTARY CONVERTORS

When direct current, only, is available it is necessary to install a rotary converter to operate any efficient High Frequency machine. These Rotary Converters are equipped with a special Condenser, for line protection.

A954 500 Watt capacity—operating on 110 Volts D. C., and delivery 110 Volts 60 Cy. A. C. Designed for the new Aloe "Lightning" Diathermy Outfit Price, $85.00

A959 500 Watt capacity—operating on 220 Volts D. C., and delivering 110 Volts 60 Cy. A. C. Designed for the new Aloe "Lightning" Diathermy Outfit ..... " 90.00

Introductory

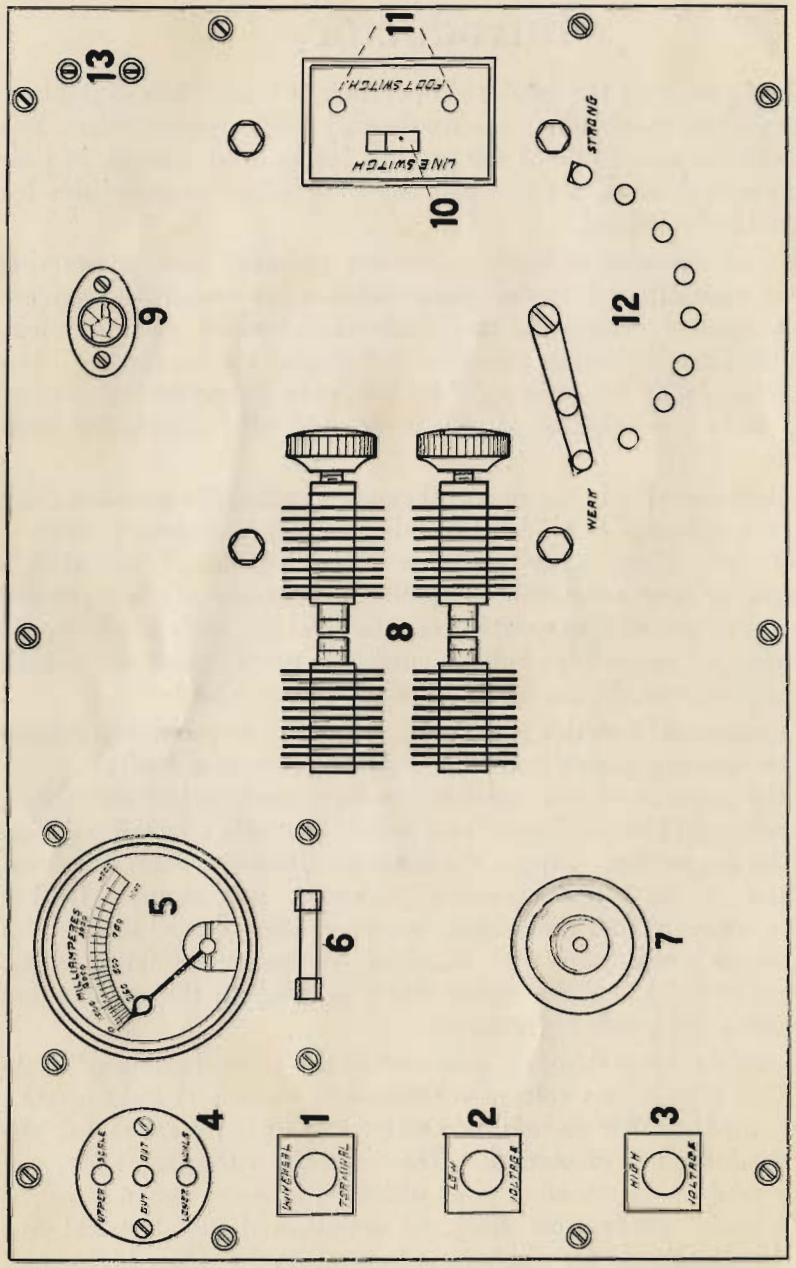
Before you study the details of operation of your "New Lightning" Cabinet, a few words about electro-therapy might not be amiss. You are about to employ one of the greatest forces in all nature, in your combat with disease; a force that has tremendous potentialities for the benefit of mankind.

The first essential, in using this force, probably is an unswerving faith in yourself and in the electro-therapeutic modalities you are about to employ. After you have studied this booklet, you will know, absolutely, exactly how to prescribe and employ electro-therapy. Use it, therefore, with the same calm faith in your judgment that characterizes your prescription of medicines and of regimen for your patients.

While wonderful in the results they accomplish, the action of high frequency currents is readily explained. A tremendous voltage—65,000 volts is the capacity of the "New Lightning" Cabinet—is employed to secure the desired results in the body of your patient. However, to permit this great current to enter the body direct would be dangerous, so the high voltage current is transformed into a high frequency current, by the mechanism within the cabinet.

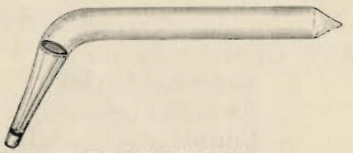
To understand how this is done, let us take as an example a stream of water, coming under tremendous pressure from a hydrant. Imagine the pressure of this water increased something like 650 times, and you would have sufficient force to kill instantly any living object struck by the stream. Just so, the ordinary street current is increased in voltage in the "New Lightning" Cabinet. But, suppose further that the water, at that tremendous pressure, were forced through an atomizer, in which there were hundreds of thousands of tiny holes. The result would be a fine spray that would fill all the surrounding atmosphere but would be harmless.

Exactly the same thing happens within the "New Lightning" Cabinet. The tremendous voltage is transformed into a current of such minute impulses that no sensation affects the body except that of the even, soothing flow of warmth. This warmth, within the body, can be increased or decreased at your pleasure, to meet the needs of the specific case. There is no shock, no sensation of the electrical current. Properly used the diathermic force from the "New Lightning" Cabinet is entirely safe, and a wonderful boon in many ailments.



This Diagram Shows Top of "New Lightning" Physio-Therapy Cabinet

IMPROVED EAR ELECTRODE



A43 Properly shaped, and well insulated ..... Price, $1.60

HOLLENDER-COTTLE INSULATED ADJUSTABLE HIGH FREQUENCY HANDLE

This perfected high frequency handle is made of hard rubber, with cord attached, ready for use with any standard ½ inch electrode. No bare metal, no shocks, utmost convenience and comfort in treating patient.

A059 Hollender-Cottle, Insulated adjustable, High Frequency Handle, complete with cord ..... Price, $12.00

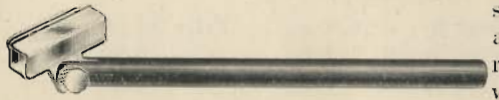
INSULATED SHOCK PROOF HANDLE FOR HIGH FREQUENCY ELECTRODES

Made entirely of one piece of hard rubber, with the heavy insulated connecting cord fastened securely to the spring brass clamp inside.

A049—For ½ in. Electrodes ..... Price, $2.25
A 49—For ⅝ in. Electrodes ..... " 3.75
A 80—Extra Long Protected Handle ..... " 6.50

ADJUSTABLE HIGH FREQUENCY HANDLE

Nickel-plated clamp on end of long fibre insulated handle is arranged to swivel freely as desired to any angle. A very convenient arrangement especially for orificial work.



A56 ..... Price, $1.50

UNIVERSAL HANDLE FOR HIGH FREQUENCY ELECTRODES

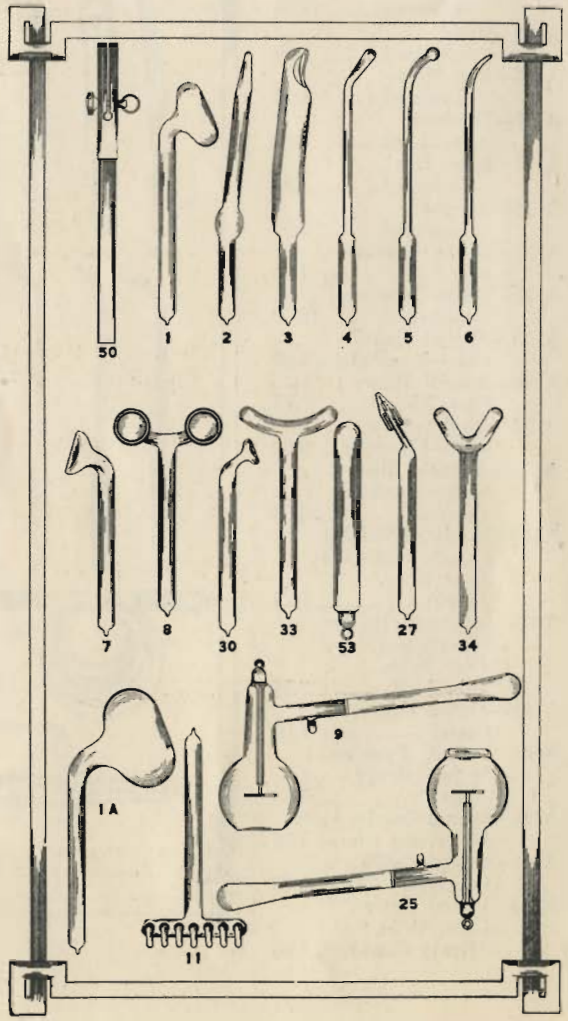
Insulated section made of hard pressed fiber, having nickel - plated brass spring clamp on end for holding Electrodes firmly in position. Large swivel ring connector to which is hooked the insulated cord, permits of perfect freedom of movement. Made in two sizes.

A050 For ½ in. Electrodes ..... Price, $1.00
A 50 For ⅝ in. Electrodes ..... " 1.00

HIGH FREQUENCY ELECTRODES

These glass High Frequency electrodes are made by experts, of the very best glass obtainable; carefully annealed. All sizes and makes of holders can be fitted on request, but unless otherwise specified our standard ⅝ in. size is furnished on all orders.

	Price
A 1—Surface—Plain	$0.75
A1A—Surface—Plain	1.50
A 2—Rectal—Plain	.65
A 3—Vaginal—Plain	.75
A 4—Nasal—Plain	.65
A 5—Throat—Plain	.65
A 6—Urethral—Plain	.65
A 7—Eye, Single—Plain	.75
A 8—Eye, Double—Plain	1.25
A 9—Metal Disc Body Condenser Type	3.50
A11—Comb (Scalp)	1.75
A25—Cataphoresis	3.50
A27—Glass Fulguration	1.75
A30—Corn—Small Cavity	.75
A33—Outer Throat	.75
A34—Spinal	.75
A050—Universal Handle, ½ in. stem	1.00
A50—Universal Handle, ⅝ in. stem	1.00
A53—Glass Handle for Indirect Treating	1.25
A56—Adjustable Handle	1.50



EXPLANATION OF DIAGRAM ON OPPOSITE PAGE

No. 1. The Universal Terminal. This binding post forms one outlet for both the high and low voltage diathermy currents. This outlet is always used with one of the other (Nos. 2 or 3) Diathermy Outlets.

No. 2. Low Voltage Diathermy Outlet. Must be used with Terminal No. 1 to complete the low voltage diathermy circuit.

No. 3. High Voltage Diathermy Terminal. This binding post is used with Outlet No. 1 to complete the high voltage diathermy circuit to the patient.

No. 4. Control Plate and Switch for Milliampere Meter. Further described on Page ——.

No. 5. Milliampere Meter. With double scale, calibrated 0-1000 and 0-4000 Milliamperes.

No. 6. Protecting Fuse for Milliampere Meter.

No. 7. Highest Voltage High Frequency Pole. For unipolar discharge only.

No. 8. Two Section, Four Point Multiple Spark Gap.

No. 9. Pilot Lamp. Red glow indicates that current is "on."

No. 10. Main Line Switch.

No. 11. Terminals for Foot Switch Connection.

No. 12. Main Current Controller.

No. 13. Inlet for Line Current. Make sure that the current available in your office is identical to the markings on the Name Plate on your Cabinet before making connection to the line.

SPECIAL INSTRUCTIONS

There is a Caution Card under the cover of the box in which your "New Lightning" outfit was shipped. Be sure to pay close attention to the card. Under it, you will find a Packing Slip, on which each article should be checked off, as you remove it from the box, to make sure that every part of the outfit is there. As these boxes are carefully packed and double checked, there should be nothing missing. If there is, report to us at once.

Remove the Connecting Cords of the outfit, which are beneath the excelsior at the top of the box; and the Auto-Condensation Pad; this brings you down to the Cabinet itself. Open the lid with care, and make sure that all the accessories are in their proper position on the retaining clips within the outfit. Remove the packing material, dust your "New Lightning" Cabinet, hook it up according to instructions—and you are ready to learn how to operate it.

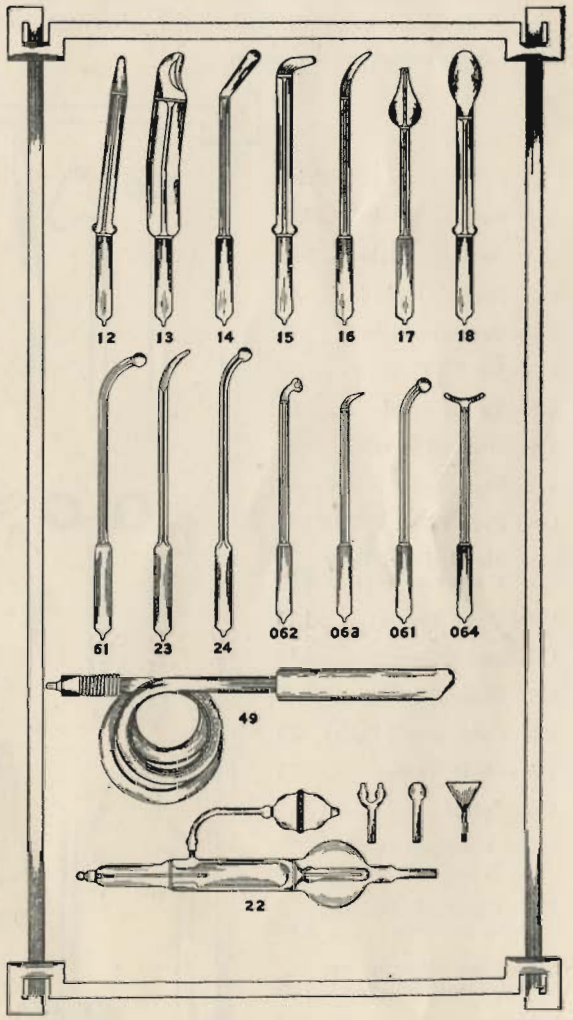
It should be borne in mind that this "New Lightning" Cabinet is especially made for the alternating current. No other current should ever be employed with any "New Lightning" Cabinet unless you have had it especially made, in which case only that current should be used.

PACKING LIST

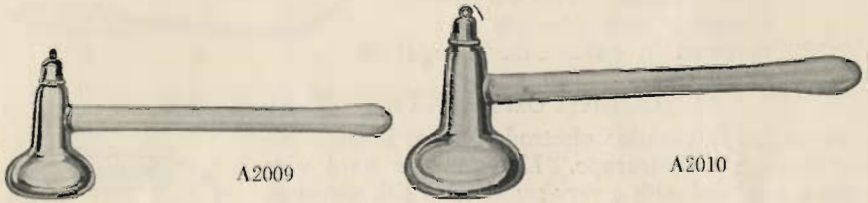
1 Connecting Cord and Plug
2 Extra Fuses
1 No. 1A Surface High Frequency Electrode
1 No. 2 Rectal High Frequency Electrode
1 No. 5 Throat High Frequency Electrode
1 No. 13 Insulated Vaginal High Frequency Electrode
1 No. 56 Adjustable High Frequency Handle
1 No. 83 Extra Heavy Protected High Frequency Cord, 5 ft. long
1 No. 52 Autocondensation Handle
1 No. 413 Autocondensation Chair Pad
2 No. 1330 Diathermy Cords
1 Lb. 841 Block Tin
2 No. 868 Electrode Clamps
2 Yds. 856 Elastic Bandage
1 No. 906 Opalite Jar Diathermy Soap Lather Paste
1 No. 614 Diathermy Hand Electrode
1 No. 930 Universal Diathermy Clamp Electrode
1 Pc. No. 1234 Straight Needle for No. 20 Fulguration Electrode
1 Packing List
1 Instruction Book

INSULATED GLASS HIGH FREQUENCY ELECTRODES

	Price
A 12—Rectal —Insulated	$1.60
A 13—Vaginal —Insulated	1.85
A 14—Nasal —Insulated	1.60
A 15—Post Nasal —Insulated	1.60
A 16—Urethral —Insulated	1.60
A 17—Inner Ear —Insulated	1.60
A 18—Tongue —Insulated	2.00
A 21—Ozone Generator, only	7.50
A 22—Ozone Generator, complete	10.00
A 23—Special Heavy Glass Urethral	1.00
A 24—Special Heavy Glass Throat	.75
A 36—Insulated Prostatic Electrode	2.50
A 37—Adenoid Electrode—Insulated (Murray)	2.00
A049—Insulated Rubber Handle and Cord (For ½ in. Tubes)	2.25
A 49—Insulated Rubber Handle and Cord (For ⅝ in. Tubes)	3.75
A 61—Throat (Heavy Glass)	1.00
A061—Dental Pyorrhea, ½ in. (Heavy Glass)	1.00
A062—Dental Cocain, ½ in. (Heavy Glass)	1.00
A063—Dental Cavity, ½ in. (Heavy Glass)	1.00
A064—Dental Outer Gum, ½ in. (Heavy Glass)	1.00



HIGH FREQUENCY NON-VACUUM ELECTRODES



A2009 A2010

These Electrodes, with exception of Nos. A2009, A2010, and A2025 will have regular 5/8 in. shanks. Nos. A2009, A2010 and A2025 have Insulated Handles blown on the electrodes themselves. Non-Vacuum Tubes may be had to fit the 1/2 in. Handles by placing "O" before catalog number when ordering except those which have handles attached.

A2001—Surface	—Plain—2-inch face	Price, $5.00
A2002—Rectal	—Plain	" 5.00
A2003—Vaginal	—Plain	" 5.00
A2004—Nasal	—Plain	" 5.00
A2005—Throat	—Plain	" 5.00
A2006—Urethral	—Plain	" 5.00
A2007—Eye	—Single	" 5.00
A2008—Eye	—Double	" 5.00
A2009—Surface	—Condenser Type, Med.	" 4.00
A2010—Surface	—Condenser Type, Lge.	" 5.00
A2011—Comb	—Scalp	" 5.00
A2012—Rectal	—Insulated	" 5.00
A2013—Vaginal	—Insulated	" 5.00
A2014—Nasal	—Insulated	" 5.00
A2015—Post Nasal	—Insulated	" 5.00
A2016—Urethral	—Insulated	" 5.00
A2017—Inner Ear	—Insulated	" 5.00
A2018—Tongue	—Insulated	" 5.00
A2023—Urethral	—Special Heavy Glass	" 5.00
A2024—Throat	—Special Heavy Glass	" 5.00
A2025—Cataphoresis		" 5.00
A2030—Corn	—Small Depression	" 5.00
A2033—Outer Throat		" 5.00
A2034—Spinal		" 5.00
A2036—Prostatic	—Insulated	" 5.00
A2061—Dental Pyorrhea	—Heavy Glass	" 5.00
A2062—Dental Cocain	—Heavy Glass	" 5.00
A2063—Dental Cavity	—Heavy Glass	" 5.00
A2064—Dental Outer Gum	—Heavy Glass	" 5.00

Operating Instructions

THE UNIVERSAL TERMINAL

This outlet, No. 1 on the diagram on Page 4, is always used in connection with either terminal No. 2 or 3 for diathermy treatments. Always make sure that the cord tip is securely fastened under the binding post head before turning on the current, as firm contact is absolutely necessary.

LOW VOLTAGE TERMINAL

Low Voltage Diathermy is employed when the body resistance is not great; as, for example, when treating the thinner parts of the body, or where electrodes are not too widely separated, one from the other. Low voltage is also better for surgical diathermy (electrocoagulation). This low voltage terminal No. 2 must always be used with outlet No. 1 to complete the circuit.

HIGH VOLTAGE TERMINAL

A certain amount of voltage is always required to overcome resistance in any electrical circuit, and in order to overcome this resistance, you should select the proper voltage before applying diathermy. Terminal No. 3, used with outlet No. 1, delivers a very high voltage current for general diathermy applications, as well as for auto-condensation treatments. The current as obtained from terminals No. 1 and 2 in combination will be found ideal for treating the hand, wrist, ankle, etc. The higher voltages are required on the heavier parts, or where the electrodes are more widely separated, one from the other during treatment.

THE METER CONTROL

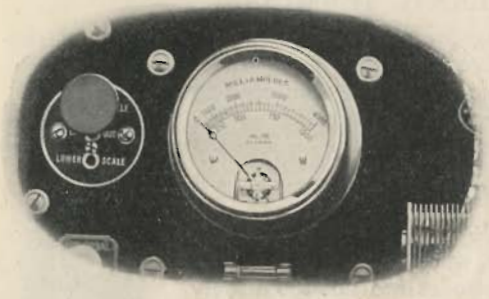
You will note that the Milliampere Meter has a double scale with calibrations from 0 to 1000 and from 0 to 4000 Milliamperes. The change from one scale to another is made with the plug in control plate No. 4. The metal plug with the black knob is placed in the lower outlet (lower scale) when the current is not to exceed 900 M. A. Place plug in the upper hole (upper scale) when about to employ heavy currents, or anything over 900 M. A.

The "New Lightning" cabinet may be used without the meter (in case of burn-out or other necessary repair) by placing the control block in the center hole, marked "cut-out." With this plug in the center hole, the meter may be lifted off the cabinet top entirely and the machine will function perfectly. This makes an ideal arrangement because it simply means that you can use your cabinet while the meter may be undergoing necessary repairs, instead of the whole equipment being "laid-up."

THE MILLIAMPERE METER

This meter is described in the foregoing paragraph. Should you acci-

dently touch your cord tips or electrodes together with the current on, certainly the meter cords will be damaged; but, ordinarily, you should have no meter trouble during the lifetime of the cabinet. This meter is made expressly for the "New Lightning" cabinet. It is of the d'Arsonval type of construction, with double-calibrated scale. It is sturdily constructed and is very accurate, but, like any other piece of fine mechanism, must be handled properly. Always use the upper scale for currents to exceed 900 M.A., although there is a safety device built right in the meter to withstand an overload of 100%. The two scales are provided that the small currents passing may be read with just as much accuracy as the heavier discharges.



Should the meter needle fail to go back all the way to zero, there is a small adjusting screw coming through the glass top, which, when turned to the right or left, increases or decreases the spring tension, and the needle moves either way.

THE METER PROTECTING FUSE

In order to protect the meter against an overload, such as accidental short circuiting of cords or electrodes, a fuse is provided (No. 6). This fuse will blow out when approximately 1500 M.A. is reached with the lower scale adjustment. Inside the cabinet a coil is connected across this fuse circuit which carries current after the fuse is blown, preventing the peak voltage from rising to a dangerous point and giving the patient a momentary shock, and keeps the current output within safe limits through the meter. The fuse wire will glow to a red heat when 1000 M.A. are reached on the lower scale and 4000 M.A. on the upper scale.

THE HIGHEST VOLTAGE OUTLET

The current available at this outlet is adaptable for use with glass vacuum and non-vacuum electrodes, and for monopolar desiccation and fulguration. The voltage from outlet No. 7 is the highest obtainable from the cabinet. The frequency of discharge is very high, but the actual current volume, as measured in milliamperes, is quite low.

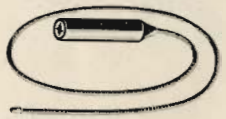
MULTIPLE SPARK GAP

These Tungsten spark points are adjustable individually—a single pair or both sets may be used, depending upon the amount and type of current output desired. These tungsten points constitute the most important regu-

TONSIL FULGURATION ELECTRODE

A29 Special Throat Fulguration Electrode with wire tip mounted in end.....Price, $1.50

BLADDER FULGURATION ELECTRODE



A special fulguration electrode for use in the bladder through a cystoscope. Made with a hard wire center, insulated with a very small oiled silk covering. Has solid silver tip, olive shaped, of 2 mm. diameter and about 4 mm. long. Other end is arranged to accommodate an ordinary cord tip.

A41 Complete as illustrated.....Price, $1.50

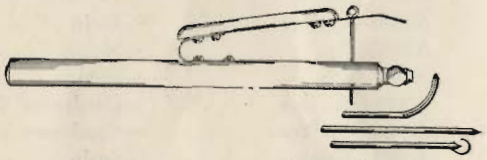
FULGURATION WIRE

Steel music wire, covered with pure gum rubber, for introduction through the cystoscope. When used in connection with one of our High Frequency machines excellent results may be obtained in the removal of growths in the urinary bladder.

A40 Fulguration Wire.....Per ft. 10c

FULGURATION ELECTRODE

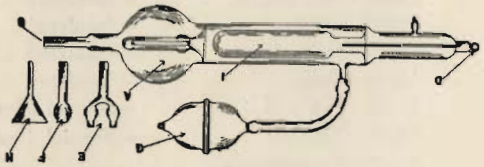
Fulguration is the best known method of applying the High Frequency Current for the removal of Warts, Moles and similar growths.



A20 Fulguration Electrode and three tips.....Price, $2.00

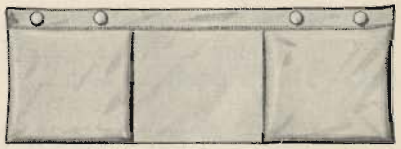
OZONE GENERATOR

An all glass Ozonizer, made in one piece. Has two compartments, one for holding the purifying oils, and a vacuum chamber to which is connected the wire from any high frequency source.



A22	Ozone Generator, complete as illustrated, with oils	Price,	$10.00
A70	Rubber Bulb, only	"	.50
A71	Hose Connection	"	.05
A72	Mouth Piece	"	.15
A73	Nose Piece	"	.50
A74	Funnel	"	.30
A75	1 oz. Bottle Pine Needle Oil	"	.75
A76	1 oz. Bottle Eucalyptus Oil	"	.40

DIATHERMY SANDBAGS

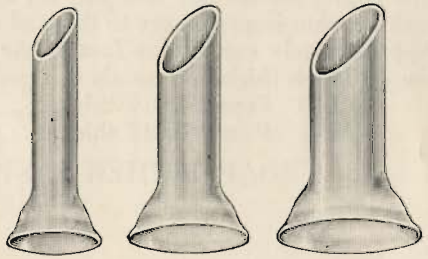


When the bag is placed over the patient the flat band only bears on the electrode—the weights hang down at the sides. The longer pads are made to hang over the side of the treatment table or cot. Made of tough canvas fabric. The end, or sand pockets are of the same size and capacity regardless of the length of the whole, and are about half filled with sand. This leaves the assembly very flexible and adaptable.

A880	5 in. wide by 15 in. long	Price, $1.25
A881	5 " wide by 25 " long	" 1.50
A882	5 " wide by 36 " long	" 1.50
A883	5 " wide by 45 " long	" 1.60
A884	5 " wide by 60 " long	" 1.80

RECTAL AND VAGINAL SPECULA OF GLASS

For use in connection with electrical applications (Diathermy, High Frequency, Galvanism, etc.) in the rectum and vagina. These specula are made in three standard sizes:



A857 A858 A859

A857	22 mm. diameter	Price, $0.60
A858	30 mm. diameter	" .70
A859	40 mm. diameter	" .80

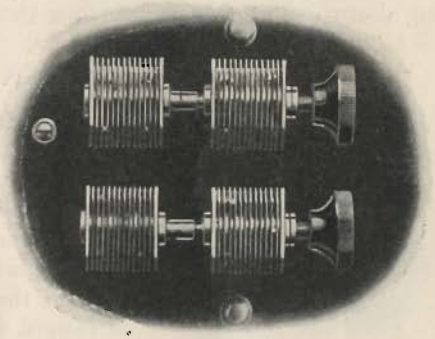
HAWKEYE TIMER

A wonderful aid to accurate timing, particularly valuable when the physician is treating more than one patient at a time. Registers the length of any treatment. The Hawkeye rings an alarm at the exact moment treatment should end. Should be in every diathermy and quartz light treatment room.

A469 Hawkeye Timer ..... Price, $7.50

lating feature on the outfit. Their function is to regulate the discharge of all of the currents available in this cabinet; that is, in connection with the control lever, No. 12. These spark points may be adjusted with the current passing; that is, opened and closed at the will of the operator, until the proper discharge has been obtained.

When the tungsten points are closed, there is a direct short circuit on the transformer and no discharge from any of the current outlets. As these points are gradually separated, the high tension current passing across the gaps produces an oscillating or vibratory effect, which is increased up to that point where the available voltage is insufficient, and the sparking ceases. The highest rate of oscillations; that is, the highest frequency of discharge is obtained with the spark interrupter points nearly closed. At this point is also obtained the smoothest current flow. More milliamperage is obtained by separating these tungsten points by turning the black control knobs to the left, up to that point, of course, where they become too widely separated that the voltage is insufficient to span the gap, when the machine ceases to function. When this stopping occurs, simply screw the points somewhat closer together and the sparking will resume.



You will find on test that by moving the control lever No. 12 to the right gradually, from weak to strong, that you can separate the tungsten points wider and wider; that is, as the voltage is increased by the means of lever No. 12, so can the tungsten points be more widely separated. Always increase the current with Nos. 8 and 12 jointly; that is, increase one proportionately with the other. A nearly closed spark gap with the control lever No. 12 on point 5, is just as faulty operating technic as to try operating with lever No. 12 on point 1, and attempting to open the spark points too far. It is advisable to use both sets of points at all times and have them adjusted very nearly alike; that is, don't have one pair widely separated and one pair close together. You will note a much more even discharge when following out the above instructions.

The contact points are made of pure electrically welded tungsten, the hardest and most durable material available. They will not pit or become corroded, nor, with just ordinary care, need any special attention.

THE PILOT LAMP

This lamp is only an indicator to show when the current is "off" and "on" and has nothing to do with the operation of the cabinet proper. With this lamp removed from its socket, the machine will function just the same. Never leave the cabinet with this lamp burning.

THE FOOT SWITCH

A foot switch may be used when required. As both of the operator's hands are occupied during electrocoagulation procedure, and quite often while doing general, High frequency and Diathermy work, a foot switch (Catalog No. A1205) is a handy accessory. The tips on the end of the foot switch cable are set into holes in the fibre plate at point 11. When the foot switch is to be used, the main switch No. 10 is left in "off" position; pressing down on the foot switch then sends the current through the machine.

THE MAIN SWITCH

The mechanism of this switch No. 10 is entirely concealed and is so constructed that there is no danger of its getting out of order at any time. The switch contacts are oversize, and made of phosphor bronze to insure long life. When the square black button is pushed backwards and the white dot exposed, the current is "on"; throwing the switch forward shuts the current off. This switch controls the entire current entering the cabinet.

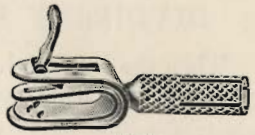
THE MAIN CONTROLLER

It is essential at all times that proper voltage input to the main transformer be altered in proportion to the milliamperage and type of current desired, as well as for the proper operation of the spark interrupter points, to insure perfect resonance. When you place controller No. 12 on point farthest to the left, or, as marked "weak" on the instruction chart, you have the smallest available voltage entering the cabinet transformer, and this voltage is increased as the lever is moved from button to button to the right, to the point marked "strong."

Never attempt to obtain a large milliampere reading when administering a diathermy treatment with the controller No. 12 on button 1 and by opening the spark interrupter points No. 8 too wide. Start the machine with this lever on the weakest setting and the spark interrupter points nearly closed, separate the tungsten points gradually, keeping the sparking surfaces about even distances apart on both pairs, and increase the amount of voltage entering the machine with lever No. 12 proportionately. Should you attempt to obtain the maximum current with lever No. 12 on point 1 and opening the spark points No. 8 too far, your discharge will become unsteady. A smooth, even, resonant flow is much more desirable.

ELECTRODE CLIPS

A868 Block Tin or Mesh Electrode Clamp .....Price, $0.30
A852 The "Fahnstock" Clip.... " .05



A868

CONNECTOR FOR LIQUID BATH

Connector lays flat in the fluid, and wire connection is made to binding post. For carrying the Sinusoidal or Diathermy Currents to water in trays, for treating the limbs.

A618 Liquid Bath Connector .....Price, $0.60

BLOCK TIN IN ROLLS

This is something entirely new in sheet electrode material, composed of a center of very flexible alloy with a sheet of *pure tin* on each side. Electrotherapeutists will appreciate the fact that *pure tin* is placed in contact with the skin in preference to the lead ordinarily supplied. It is readily cut. Approximately one square foot of the .018 material, or two square feet of the .010 inch thickness, equals one pound. 12 in. wide.

A840 Pound—.010 thick .....Price, $0.65
A841 Pound—.018 thick ..... " .65

SOAP LATHER PASTE FOR DIATHERMY

A906

A907

A876

Convenient, always ready.

A906 16 oz. opalite jar .....Price, $1.00
A907 16 oz. refill for jar, in wax paper carton.... " .75
A876 In handy collapsible 10 oz. tube..... " 1.00

METAL CONNECTOR FOR MESH ELECTRODES

A simple device to fit the No. A1330 Diathermy Cords. Made of spring brass, heavily nickel-plated. Cord tip cannot come loose when once snapped in place. The contact is flat, but there are several small teeth protruding for engaging the surface of the electrode to prevent slipping. On the limbs this device should be held in place with our No. A854 Elastic Bandage; on the body, with a sandbag.

A851 Metal Connector ..... Price, $0.08

MESH ELECTRODE CUFFS

Very convenient and handy, and once used will be found indispensable. For employing the "Cuff Method" of applying diathermy to the limbs and joints, every physician should have at least one pair of Mesh Electrode Cuffs. These are strips of German Silver Mesh, 3 inches wide and from 12 to 24 inches long, with an arrangement fastened to one end for holding the elastic bandage.

A900 Mesh Cuff and Clamp—3x12 in. ..... Price, $2.55
A901 Mesh Cuff and Clamp—3x16 " ..... " 3.15
A902 Mesh Cuff and Clamp—3x20 " ..... " 3.75
A903 Mesh Cuff and Clamp—3x24 " ..... " 4.35

FLEXIBLE PAD ELECTRODES

A flexible, Felt Pad, backed with pure block tin. Can be adapted to most any shape. Has connection on back for fastening wire from machine.

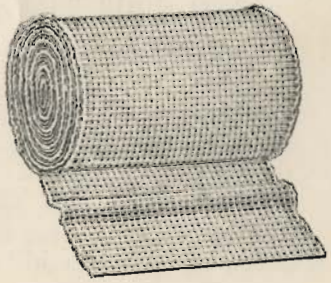
A613 Felt Pad Electrode—8 in.—Round ..... Price, $2.00
A690 Felt Pad Electrode—3x6 in. ..... " 1.50

SPONGE PAD ELECTRODE

Lay this pad in your tray or pan of salt water, and your patient will not complain of hot spots when placing hand or foot down for contact.

A886 ..... Price, $2.00

ELASTIC ELECTRODE BANDAGE



Use of Elastic Bandage is the only known method of binding Diathermy Electrodes to the limbs, which will permit the patient to move if necessary for the sake of comfort without the electrode shifting. These Bandages may be washed, and always kept sanitary.

A854 3-inch width—yard ..... Price, $0.35
A856 2-inch width—yard ..... " .20

BEFORE MAKING CONNECTION TO LINE

Remove all cords, electrodes or any loose pieces from the top of the apparatus. See that the square black knob on line switch No. 10 is pushed forward to "off" position. The twisted green cord with the screw plug on one end and the stage attachment on the other is for connecting cabinet to the line current. Set this flat connector over the two split plugs marked "line" (No. 13) and screw the swivel end into any convenient lamp socket; which socket has first been tested with a lamp bulb to make sure it is "live."

CAUTION: Make absolutely certain that the available line voltage and cycles are identical to the markings on the name plate on your cabinet.

Set the control lever No. 12 on the point farthest to the left ("weak"). This is only for adjusting purposes, the current may be increased later as desired by advancing lever No. 12. Close the spark interrupter points No. 8 by gently turning the two black adjusting knobs to the right (clockwise); then open gradually about one-sixth of a turn (each pair). Bear in mind that you are merely making a test and that these spark points may be adjusted later to any desired setting. Push the square black button on switch No. 10 backward—the pilot lamp will illuminate, sparking will appear at the interrupter points No. 8, and you will notice a slight hum from the transformer in the cabinet. The "New Lightning" is now ready for treatments. Turn off current at switch No. 10.

OPERATING EXAMPLES TO OBTAIN UNIPOLAR HIGH FREQUENCY CURRENT

Set lever No. 12 on Point 1 ("weak"), close the spark interrupter points No. 8 by turning the black knob to the right. Be sure that the line switch No. 10 is in "off" position. Connect the heavy insulated cord (No. 83) to post No. 7 and to the connecting ring on the insulated high frequency handle No. 56. Place either one of the glass electrodes as desired in the spring end of the No. 56 handle and clamp it gently.

The milliampere meter No. 5 is not connected in this high voltage circuit, therefore the setting of the plug in switch plate No. 4 is immaterial. Close switch No. 10 and gradually separate the spark interrupter points No. 8 until the desired amount of current is obtained.

The current volume is increased two ways, by advancing control lever No. 12 and by opening spark interrupter points No. 8.

EXAMPLE, FOR MEDICAL DIATHERMY

Set control lever No. 12 on point 1 ("weak"). Be sure that the main switch No. 10 is in the "off" position. Close the spark interrupter points No. 8. Use the heavy rubber covered cords (No. A1330) to make connections from diathermy electrodes to either outlets (Nos. 1 and 2) or (Nos. 1 and 3,) depending on the voltage desired. For first test, place one cord tip in universal terminal No. 1; the other end of this cord is run to the patient.

The other cord is run from high voltage outlet No. 3 to the patient. For this test, we will substitute a bowl of salt water for the patient; fasten the two connecting cords by means of the No. 868 clamps on to two small strips of the sheet block tin (No. A841) and drop these two pieces of metal over the edge of the glass into the brine, making sure that they do not touch one another. Use just about a tablespoon of salt to a cup of water and keep your electrodes fully an inch apart. Close the line switch No. 10 and gradually separate the spark interrupter points until the needle on the meter moves. Now try various settings of the control lever No. 12 and the spark interrupter points No. 8. Increase and decrease the currents as registered on the meter several times. Open the line switch No. 10, change the setting of the plug No. 4 so the other meter scale may be read, until you become familiar as to how much each maneuver affects the milliamperage.

Imagine that you are driving a new car, that you are sitting in the driver's seat—shifting the control levers, the brake, the clutch, the accelerator, starting switches, etc., as you would before actually going on the road.

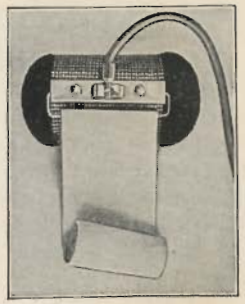
Now try with your cord connected to low voltage outlet No. 2 and observe the different effects at varying pressures and volumes of current. Unless you are fully conversant with diathermy equipment, we suggest that you do not attempt to apply the electrodes to a patient until you have studied the subject thoroughly or have had accurate instructions from one who fully understands diathermy.

EXAMPLE, FOR SURGICAL DIATHERMY (ELECTROCOAGULATION)

Have control lever No. 12 on button 1 (weak). Close spark interrupter points No. 8. Be sure that the line switch No. 10 is open. Have the plug in meter control No. 4 either set in the upper or center holes. *Never have this plug in the lower hole; that is, the* 0-1000 *scale, when using Surgical Diathermy.* Attach one rubber covered cord to universal terminal No. 1, and the other end of this cord to a piece of block tin material, about 6″ or 8″ square.

Bind this block tin electrode firmly to some part of the patient's body near the field of operation. Then attach the other rubber-covered cord to Terminal No. 2, and affix needle electrode to end of this cord. Apply local anaesthetic to the lesion. (Let us assume a minor skin affection is being coagulated.) The needle electrode is now inserted into the tissue at the base of the growth, and the current turned on with the foot switch just long enough to blanch the tissue. The current is then turned off and needle inserted at another point, and the process repeated. Be careful not to over treat. In small lesions, one application of very brief duration generally is sufficient to coagulate.

SPONGE MESH ELECTRODES



The Sponge Rubber padding may be washed and always kept clean. It is very soft, and conforms well to any uneven surface. The elastic bandage is entirely removable. (Bandage not furnished with pads.)

These combinations are the direct result of numerous suggestions that they would be very adaptable; already they have more than fulfilled expectations. Stocked in five sizes:

A891	Sponge Mesh Electrode—3 x3½ in.	Price, $2.45
A893	Sponge Mesh Electrode—4 x4½ "	" 3.15
A894	Sponge Mesh Electrode—4½x5 "	" 3.75

FLEXIBLE MESH ELECTRODES

These electrodes are composed of a series of flat links of German silver, they are flexible, practically indestructible, easily sterilized, and form an almost continual flat surface to be applied to the skin.

Especially valuable for use on uneven surfaces where solid electrodes cannot be effectively employed —on the knee, elbow, wrist, hand, spine, over the shoulder, in fact wherever it is impossible to make perfect contact with any other means.

Fits any part of the body like a glove, regardless of shape or contour. The most flexible and convenient ALL-METAL electrode ever designed.

May be applied with Diathermy, Electro-coagulation, D'Arsonval Autocondensation, Sinusoidal, or any other Electrical modality where perfect contact on the skin is necessary.

Carried in the following sizes:

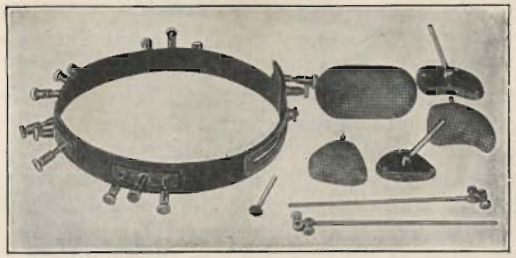
A845	4x 6 in.	Price, $1.20
A847	6x 6 "	" 1.80
A848	6x 8 "	" 2.40
A846	8x 8 "	" 3.20
A849	8x10 "	" 4.00
A850	10x12 "	" 6.00

Also supplied by the inch, as follows:

A843	3 in. wide	Price, $0.15
A844	6 " wide	" .30
A870	8 " wide	" .40
A871	10 " wide	" .50
A872	12 " wide	" .60

(Can be folded to cover any area. Will be cut to any lengths, to order. A cutting charge of 15c will be added for special lengths under 10 inches.)

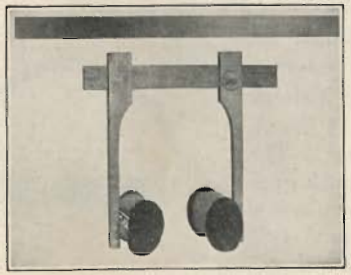
HOLLENDER-COTTLE DIATHERMY HEADBAND AND ELECTRODES



Outfit consists of headband with connections for electrodes, electrode holders and special electrodes. Headband and electrodes are readily adjusted to give proper pressure in any combination of applications. This perfected headband is a wonderful help to the physician in giving diathermy treatments to the head and face.

1-A1360	Hollender-Cottle Headband with electrodes as illustrated and listed below	Price,	$30.00 ea.
1-A1361	Headband with Binding Posts only	"	9.50 "
1-A1362	Long Electrode Support	"	2.00 "
2-A1364	Oval Electrode	"	3.50 "
1-A1365	Curved Electrode	"	3.50 "
1-A1366	Triangular Electrode	"	3.50 "

UNIVERSAL DIATHERMY CLAMP ELECTRODE



A930 Universal Diathermy Clamp Electrode.....Price, $12.00

EXAMPLE, FOR AUTO-CONDENSATION TREATMENT

Be sure that the line switch No. 10 is in "off" position. Lever No. 12 is placed on button No. 2. The spark interrupter points No. 8 are closed gently and then opened about one-quarter turn. The plug in meter control plate No. 4 is placed in lower hole; that is, to correspond with the 0-1000 M.A. scale. The Catalog No. A413 flexible auto-condensation pad is placed on an ordinary table, or, if desired, on a convenient chair. This pad is connected by means of one of the rubber covered cords to universal outlet No. 1. The patient must recline or be seated comfortably on this pad, and, if a pillow is to be used, it must be fairly thin and placed under the pad, in preference to immediately under the patient's head. This is done because, in the latter event, too much of the body is too far removed from the electrode plate in the pad itself. Connect the long nickel-plated auto-condensation handle (Cat. No. A52) by means of the other rubber covered cord, to the high voltage outlet No. 3. This handle is held firmly in the patient's two hands, and the hands themselves are supported away from the body by means of a book, several layers of toweling, or other simple insulating material. Close the line switch No. 10 gradually. Open spark interrupter points No. 8 gradually.

You will find that the reading on milliampere meter No. 5 is increased by advancing lever No. 12, as well as by further opening the spark points No. 8. A good test is to have the patient either rise up slightly from the pad, or lean forward a bit, if in a sitting position, while the current is on and observe how the reading on the milliampere meter will vary as the body is moved away from the pad; that is, away from the actively charged field. This is simply to prove to you that for maximum current reading, the patient must remain close to the pad. You will find that the milliamperage will vary with different patients, a stout patient almost invariably taking more current by means of the auto-condensation pad, with the same setting of all of your control levers than a thin patient. 400-600 M.A. is quite sufficient for practically any autocondensation treatment.

EXAMPLE, OF INDIRECT DESICCATION

This current is obtained in exactly the same manner as the indirect high frequency discharge mentioned in the foregoing, only instead of the fingers withdrawing the current in a mild manner at the desired spot, a pointed metal electrode is employed. You will see, therefore, that the current is extracted at a very limited area, and the effect is one of extreme heat at this point of contact—enough to desiccate or dehydrate, or even to coagulate the tissues, when sufficient current is used.

EXAMPLE, OF INDIRECT HIGH FREQUENCY APPLICATION

See that the line switch No. 10 is open; that the control lever No. 12 is set on weakest point and that the spark interrupter points No. 8 are nearly closed. The current volume employed is just about the same as when connecting the glass vacuum and non-vacuum electrodes directly to post No. 7. but the application is just reversed. Connect the heavy black insulated cord from pole No. 7 to the auto-condensation metal handle, (Cat. No. A52). The patient holds this handle firmly; the current is turned on and regulated just the same as for the high frequency current discharge; but the current now is taken from the patient's body with the operator's fingers at the desired points. You will find this a most convenient method of applying the high frequency current in certain instances where the electrode application is undesirable.

POINTS TO REMEMBER

Never permit your diathermy electrodes to touch one another when the current is passing, as this creates a direct short circuit, and there is danger of burning out your milliampere meter.

The "New Lightning" cabinet embodies all of the very latest and most approved methods of generating high frequency currents.

This outfit is constructed with the very best material; it is well-balanced in design, and a great deal of care is employed in inspection to make sure that it is perfect before it leaves the factory. With just ordinary care, it will last many years. It is very important, however, if the outfit is to work efficiently and to have long life, that it must be kept reasonably clean and free from dust.

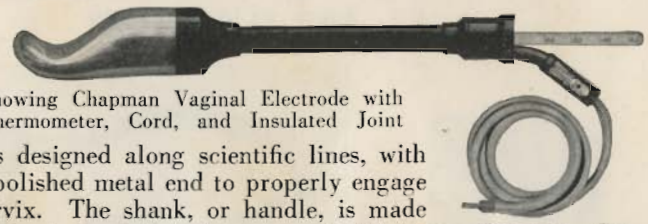
Dust between the spark interrupter cooling appliances occasionally. Clean surfaces radiate heat much more readily than dirty ones.

Always be sure that the plug in cut-out No. 4 is properly placed before using heavy currents. Either use the upper scale—0-4000, or cut out the meter entirely by setting the plug in center hole, when employing over 900 milliamperes.

Never leave your machine for a long period of time with the current on. If the "New Lightning" cabinet is not to be used for some hours, as, for instance, over night, always cut off the current where the connecting cord is attached to the line wiring.

Always be sure to cut off the current with main line switch No. 10 before changing any of the high voltage connections; and last, but by no means least, never use this apparatus on any other current than that plainly indicated on the name plate.

CHAPMAN VAGINAL ELECTRODE

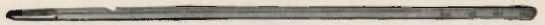


Showing Chapman Vaginal Electrode with Thermometer, Cord, and Insulated Joint

This electrode is designed along scientific lines, with size and shape of polished metal end to properly engage the lips of the cervix. The shank, or handle, is made of hard rubber. This electrode is to be used with Diathermy Current. Supplied both with and without the special thermometer which permits the accurate maintenance of an exact temperature within the vagina. This instrument is of extreme value in the treatment by diathermy of painful or inflammatory conditions of the female pelvis.

A1886	Regulation size, with thermometer. Shank $1\frac{3}{16}$ in. diameter, cervical bowl $1\frac{3}{4}$ in. wide and $\frac{3}{8}$ in. thick. Handle of hard rubber	Price, $12.00
A1885	Without thermometer	" 6.50
A1884	Small size, with thermometer. Shank $\frac{15}{16}$ in. diameter, cervical bowl $1\frac{7}{16}$ in. wide, $\frac{5}{16}$ in. thick. Hard rubber handle	" 12.00
A1883	Without thermometer	" 6.50
A1909	Regulation size, as No. A1886, with thermometer and with cord and insulated joint	" 13.75
A1907	Small size, as No. A1884, with thermometer and with cord and insulated joint	" 13.75

THERMOMETERS FOR DIATHERMY



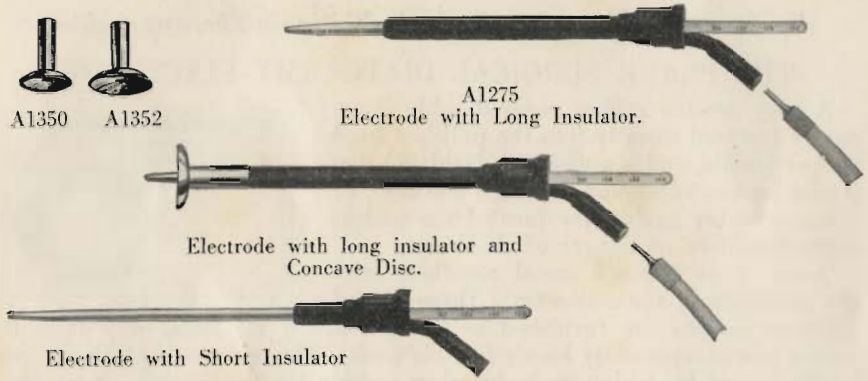
A1279	Thermometer for Internal Diathermy Electrodes (Fahrenheit scale)	Price, $ 2.00
A1288	As No. A1279, Centigrade scale	" 2.00

FOOT SWITCH FOR ELECTROCOAGULATION

This Foot Switch lays close on the floor. A touch of the toe makes and breaks the contact. Sufficient insulation has been used to make it shock proof. It is light in weight, easily moved about, yet keeps an upright position on the floor. The cable is very flexible, and covered with pure gum rubber; it may be washed and kept as new always. Cable terminals will be furnished to fit any style apparatus; specify machine used, when ordering.

A1205	Electrocoagulation Foot Switch, with 8-foot cable	Price, $9.50
A1206	Extra rubber covered cable	Price per ft., .10

CORBUS ENDOCERVICITIS ELECTRODE



A1350 A1352

A1275
Electrode with Long Insulator.

Electrode with long insulator and Concave Disc.

Electrode with Short Insulator

For the treatment of Gonorrheal Endocervicitis with Diathermy. Thermometer registers degree of heating obtained, Fahrenheit. Instrument consists of four pieces.

A1275 Complete with thermometer and both insulators as illustrated, without concave disc.....Price, $12.00

A1350 Nickel plated Concave Disc for end of Corbus Electrode, for engaging lips of cervix—1 inch diameter, slips over rod ..... " .35

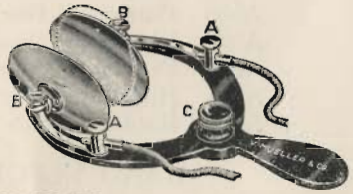
A1351 Same as No. 1350 but of 1¼ inch diameter ..... " .40

A1352 Same as No. 1350 but of 1½ inch diameter ..... " .45

EPIDIDYMITIS ELECTRODE

A specially designed clamp arrangement for administering diathermy current.

A1277 .....Price, $12.00



PROSTATIC ELECTRODES

A1278

A1278 Prostatic Electrode with Thermometer....Price, $12.00

A1285 Prostatic Electrode. Insulated over all with exception of curved top face..... " 6.50

A1286 Same as No. A1285, but with thermometer ..... " 12.00

High Frequency Therapy

Typical Conditions in Which This Therapy Is Employed

ADENOMA

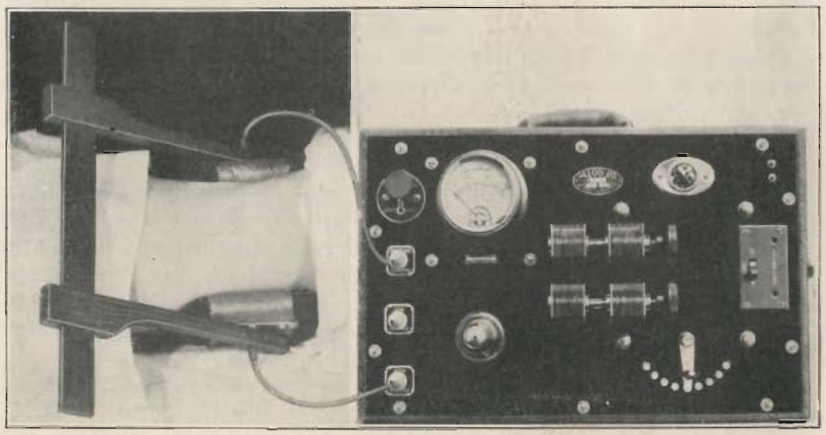
Surgical diathermy is indicated. The indifferent block tin electrode is placed on the back, and the inactive electrode is a sharp needle held in an insulated holder. The active electrode is inserted into the tumor, and the current is turned on and off by means of a foot switch. The amount of current used is quite heavy, usually running as high as 1500 M.A. It may be necessary to make a number of insertions into the tumor mass, this repetition, of course, depending upon the size of the growth.

ADHESIONS, PERITONEAL

Adhesions following appendectomy, for example, are treated to advantage with medical diathermy. The active electrode of sheet block tin or mesh, 4x6 inches, is placed anteriorly over the caecum, while the indifferent electrode, 6x8 inches, is placed on the back just opposite. The milliamperage will vary from 700 to 1000, and treatments are to be given for 30 minutes two or three times a week. (Use high voltage terminals.)

AMENORRHEA

A block tin electrode of 5x8 inches should be applied over the lower abdomen, and another one of approximately the same size under the lumbar spine. Current will vary from 700 to 1200 M. A. Application should start about a week before and continue until menstruation is established. (Use high voltage terminals.)



Use of Diathermy Clamp and Mesh Sponge Electrodes

ANEMIA

Diathermy is useful as an aid to your usual medical treatment. Use large oval-shaped block tin electrodes on the thigh, anteriorly and posteriorly. A 30-minute treatment at from 800 to 1500 M.A. should be used. A 15-minute daily application of diathermy to the spleen will also be found very useful. (Use high voltage terminals.)

ANEURYSM

Diathermy is useful here only for the relief of pain, and will not affect the course of the disease. It is important that the current be very smooth in character, and that there is no disturbing sensation for the patient, that is, no Faradic or sinusoidal effect. Start treatment with low milliamperage and gradually incresae to 800 M. A. The range of dosage according to authorities is from 100 to 1200 M. A.

The physician should be in constant attendance during this treatment, which should run possibly 20 minutes. The block tin electrodes should be of equal size, which size is determined by the depth of the chest. (Use high voltage terminals.)

ANGINA PECTORIS

Diathermy applied to the affected region two or three times a week is an excellent aid in the treatment of this disease. Apply the block tin or mesh electrodes over the heart and under the back, electrodes to be approximately 5x7 inches. Employ the least amount of current possible to secure relief of pain, generally 400 to 600 M. A. being sufficient. This treatment should not be used if hypertension is a complication. (Use high voltage terminals.)

ARTERIOSCLEROSIS

Autocondensation will lower blood pressure and help to relieve symptoms. The usual treatment is 20 minutes daily or every second day, and the current used should not exceed 700 M. A. Autocondensation treatments in excess of this amount may cause dizziness. Do not attempt to reduce the systolic pressure below 160. The maintenance of a pulse pressure of about 40 is of more importance than the reduction of the systolic pressure. (Use high voltage terminals.)

ARTHRITIS

The results usually secured in the treatment of arthritis with diathermy are very satisfactory. For treatment of arthritis in the shoulder, either employ a 4x6 inch block tin electrode under the shoulder and a mesh electrode of equal size just opposite on the chest, or a diathermy clamp (catalog No. 930) may be used to good advantage. The treatment time will average 30 minutes, and the milliamperage employed will depend upon the patient's tolerance, milliamperage ranging from 1000 to 1300.

When treating joints, always consider the patient's tolerance when increasing milliamperage. It is advisable not to use more than 100 M. A. per square inch of the smaller of the two electrodes used. Cuff electrodes three to four inches above and the same distance below the joint may be

Accessories

For Use With the "New Lightning" Physio-Therapy Cabinet

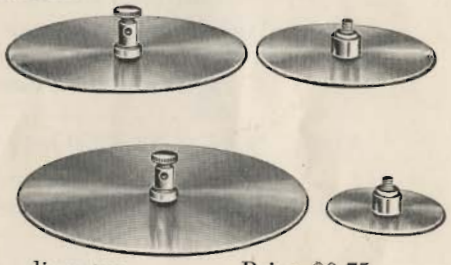
THE PLANK SURGICAL DIATHERMY ELECTRODE

A very flexible rubber covered cable is securely fastened directly into the polished hard rubber handle, and is sufficiently insulated that it may be wound around the hand and arm, or allowed to lay against the face of the patient with absolutely no danger of shocking.

There is no exposed metal anywhere with the exception of the active tip. Three tips of different lengths are furnished as illustrated. It is small, very light in weight and exceptionally handy for this work. The operator's hands are out of the line of his vision, entirely, when making the application. Suggested by Dr. T. Howard Plank for Electrocoagulation operations—especially tonsillectomies.

A862 Plank Electrode ..... Price, $5.00

LARGE DISC ELECTRODES FOR DIATHERMY



For the application of the Diathermy High Frequency Current. Discs are made of $\frac{1}{16}$ inch sheet brass, heavily Nickel-plated. Discs Nos. 606 and 609 are interchangeable on the same set of rubber handles. No handles are necessary with Nos. 610 and 611.

A606	Diathermy Disc—2 in.	diameter.....	Price, $0.75
A609	Diathermy Disc—3 "	diameter.....	" 1.00
A610	Diathermy Disc—4 "	diameter.....	" 1.25
A611	Diathermy Disc—5 "	diameter.....	" 1.60
A606R	Rubber Handle		" .75

HAND ELECTRODE FOR DIATHERMY

The rubber band holds the plate in close contact with the palm of the hand, and allows a free movement of the fingers for massage purposes.

Carefully designed; all edges smoothly rounded and polished, making it an ideal and extremely convenient appliance. A most convenient method of applying the Diathermy Current by the hand, for local treatments.

A614 Hand Electrode ..Price, $1.25

should be held firmly in place with a special holder, to which the penis is fastened with adhesive tape. It is quite necessary that the patient be comfortable during treatment.

Advance current until thermometer registers 110° F. Treat for 40 minutes and gradually reduce the milliamperage before cutting off the current. Estimate the length of the anterior urethra and again introduce electrode down to the triangular ligament. Again advance the current until temperature reaches 110° F. and repeat 40-minute treatment, and gradually reduce the milliamperage before the current is shut off. Have patient drink great quantities of water. Continue treatment until the gonococci disappear. Other technics have been advocated for the treatment of this trouble, about which we shall be glad to advise you further, if interested.

In infections of the seminal vesicles with gonorrhea, diathermy is very effective. The prostatic electrode is placed in contact with the vesicles, and a large inactive electrode about 5x6 inches is placed on the abdomen above the pubes. Treat for about 20 minutes to patient's tolerance. (Use high voltage terminals.)

VARICOSE ULCERS

Elevate the limb and apply diathermy only for the relief of pain. Actinic ray is the indicated modality in this type of case.

WARTS

Use indirect current from the unipole No. 7, to which is connected the No. 413 autocondensation pad (or the patient may hold the No. A52 handle in both hands.) An ordinary piece of pointed metal (a probe) may be used to draw off the current. Desiccate the entire growth, as well as a slight area surrounding. The wart may be removed after desiccation with a curet, after which apply a mild spark to the base to prevent recurrence.

Removal of Wart by Use of Indirect Current

employed, if desired, although a half cuff anteriorly below and posteriorly above the joint has found greater favor among technicians recently. (Use high or low voltage terminals.)

BUBOES

The active electrode placed over the inflamed gland must be slightly larger than the affected area. The indifferent electrode is a piece of block tin or mesh material about 8 inches square placed on the back nearly opposite the active electrode. The milliamperage is gradually increased to the skin tolerance. Treat for 20 minutes and cut down the current gradually before turning it off altogether. (Use high voltage terminals.)

BURSITIS

Treat with diathermy for 30 minutes daily. Use block tin, mesh or mesh-covered sponge electrodes over the bursal area. Milliamperage applied is generally to the patient's skin tolerance, or about 600 to 800 M. A. Follow with massage, and bind the joint with an elastic bandage. (Use high or low voltage terminals.)

CANCER

Surgical diathermy is preferred by a number of surgeons in the treatment of cancerous growths, because there is less danger of metastasis occurring. This is mainly true because the blood vessels and lymphatics are sealed during the operation, the operator has perfect control, can limit destruction to a very fine degree, there is considerably less pain, and the wound is thoroughly sterilized.

A large indifferent electrode of block tin, preferably about 8x10 inches, is placed on the skin somewhere adjacent to the point of attack, and the size of the growth determines the type of active electrode used. This may be in the form of a knife blade, a sharp needle or a blunt button electrode of various sizes.

The subject of cancer is too lengthy to discuss in this limited manner, but will be found thoroughly covered in a number of text books on the market today. (Use low voltage terminals.)

CATARRH, NASAL

See technic as given under "Coryza."

CELLULITIS

If pus is present, establish drainage before starting diathermy treatments. The electrodes may be either block tin or a sponge mesh clamp. Use about 700 M. A. for fully 45 minutes. (Use low or high voltage terminals.)

CEREBRAL HYPEREMIA

The patient is placed on the autocondensation pad, and a large block tin or mesh electrode about 8x10 inches is placed over the abdomen. Employ about 600 milliamperes for 30 minutes. (Use high voltage terminals.)

CHANCROID

Surgical diathermy is indicated. A large indifferent electrode about 8 inches square is applied on the lower back. The active electrode should be

a needle point in an insulated holder. Use low voltage terminals, and apply current until chancroid is thoroughly coagulated.

COLITIS

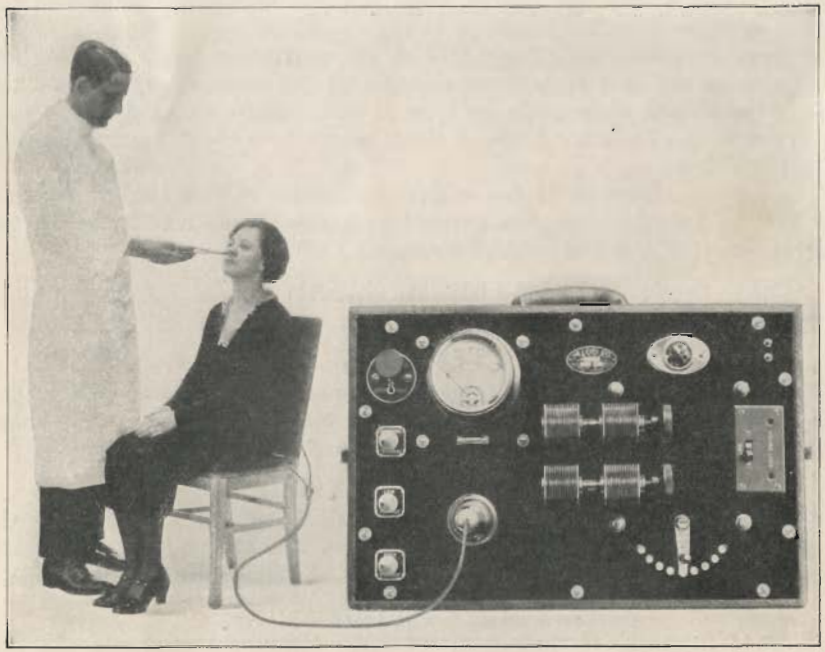
Block tin or mesh electrodes of equal size are placed anteriorly and posteriorly to the colonic area. The milliamperage employed is usually around 1000, and the treatments given 30 minutes daily until relieved. (Use high voltage terminals.)

COCCYGODYNIA

Use a rectal rod for the active electrode, and place the indifferent electrode of either block tin or mesh on the lower abdomen. A 20-minute treatment two or three times a day will bring speedy relief.

CORYZA

Insert non-vacuum electrode No. A2014 as far back into the nostril as possible. This electrode is connected to the unipole No. 7. The current should be increased gradually until the patient feels a sensation of heat but suffers no discomfort. The usual treatment is 10 minutes in each nostril. It is advisable to keep the electrode moving slowly during the treatment.



Treatment of Coryza With Non-Vacuum Electrode

Removal of Tonsils by Electrocoagulation

TONSILS

Tonsil desiccation by diathermy is accepted by a great number of physicians. Usually only about 500 milliamperes of the high voltage diathermy current are employed. The autocondensation handle No. 52 is used as the indifferent electrode, which handle is held in the patient's two hands. The active electrode is either an aluminum or steel needle. The tongue depressor employed should be of non-conducting material.

Anesthetize the tonsil and peritonsillar tissues. 300 milliamperes will be quite sufficient to shrink hypertrophied tonsils, and if you want entire destruction use about 600 M.A. A foot switch is a necessary requisite in this work. To shrink the tonsil, place needle electrode in contact with the tonsil surface, step on the foot switch and watch blanching action at point of contact very carefully. As soon as blanching appears, release foot switch and remove needle to another part of the tonsil as above, until the entire tonsil has been covered.

For tonsil coagulation, needle is introduced into the tonsil about ¼ inch. Apply current until tonsil begins to blanch, cut off current, take out needle and introduce into another part of tonsil. Usually seven or eight insertions of the needle are sufficient. The destroyed tonsil will come away in about 10 days. Never attempt forceful removal of tonsil following coagulation, as doing so will cause hemorrhage.

If your treatment was not sufficient, repeat if necessary, in a month. The post-operative care is the same as in ordinary tonsillectomy. (Use high voltage terminals.)

URETHRITIS (Acute Anterior)

As in gonorrhea, this subject is too lengthy to be fully covered in a booklet of this type, but a great deal of excellent information is contained in all of the latest text books on diathermy.

The usual method of treatment is to place the patient upon the autocondensation pad. The penis is held slightly stretched on a line parallel to the long axis of the body. The meatus should be sterilized. Lubricate sterile electrode and introduce into the urethra about 3 cm. The electrode

SCIATICA

Diathermy affords considerable relief in the treatment of sciatica. Block tin electrodes about 3 inches wide and as long as necessary, are placed below the hip along the course of the sciatic nerve, that is, anterior and posterior. Milliamperage is generally increased to the patient's tolerance, and treatments administered for 30 minutes each day. If a large part of the sciatic nerve is involved, it is advisable to use shorter electrodes and treat in sections. (Use high voltage terminals.)

SKIN BLEMISHES—BENIGN

Cleanse area to be treated with alcohol, and permit it to thoroughly dry. Use local anesthesia. For the treatment of small lesions, the indirect monopolar method is used, that is, the patient either holds the No. A52 handle in both hands or is seated on the No. A413 chair pad. Connection is made to pole No. 7.

For larger lesions, use the bipolar method, either from terminals Nos. 1 and 2 or 1 and 3 depending on the voltage required. The indifferent electrode is either a large piece of block tin or mesh material (about 8 inches square), and is placed on either the patient's back or chest, as desired; or the autocondensation handle No. A52 may be held in the patient's hands. The active electrode is usually a needle point as furnished with the No. A862 electrode illustrated on page 29. A foot switch should be used for control.

When treating warts or other lesions that involve the deeper layers of the skin, it is generally necessary to insert the needle into the growth. If the lesion is small and superficial, hold the active needle electrode about 1 mm. away from the skin, permitting the current to spark across from the electrode to the lesion. Move the electrode about over the lesion, to avoid pitting when employing this latter treatment. Blanching of the immediate area will determine the length of time of treatment. DO NOT persist in this type of treatment until the lesion is charred; blanching, only, is necessary.

TIC DOULOUREUX

Diathermy is indicated for the relief of pain. An indifferent electrode of block tin should be placed on the opposite side of the face, that is, from the affection. The active electrode is preferably of a disc shape with an insulated handle, which can be held by the patient or the operator. The milliamperage employed is generally to the patient's tolerance. The time of treatment from 15 to 20 minutes. (Use low voltage terminals.)

TORTICOLLIS, ACUTE

Diathermy followed by massage is an efficient means of treating acute torticollis. Block tin electrodes are used, the indifferent electrode to be larger than the active one. Employ milliamperage to the patient's tolerance, and treat from 30 to 40 minutes. (Use low or high voltage terminals.)

CYSTITIS

Place a 4x6 inch mesh electrode over the lower abdomen, and a large indifferent block tin electrode about 7x9 inches under the sacrum. The milliamperage should be raised gradually to the patient's tolerance, probably from 400 to 900, and the treatment is given for 30 minutes.

Certain operators prefer to treat this condition when the bladder is full, and have the patient void the urine immediately after the treatment is finished. (Use high voltage terminals.)

DIABETES, MELITIS

Reports from doctors all over the country indicate that diathermy is a splendid aid in this trouble. The indifferent electrode of mesh or block tin material is placed under the back and a somewhat smaller active electrode is placed over the pancreas and liver. Treat from 30 to 40 minutes daily, with from 750 to 1000 M.A. If high blood pressure is a complication, give patient autocondensation treatment twice a week. (Use high voltage terminals.)

DUODENAL ULCER

The pain attending a duodenal ulcer may be relieved by diathermy. The electrodes are generally of 5x6 inch size, one placed over the region of the pain and the other on the opposite side of the body. The milliamperage is generally applied to the patient's skin tolerance. Time of treatment is 30 minutes. (Use high voltage terminals.)

EARACHE

Apply diathermy over the mastoid region for 30 minutes daily or twice daily, if needed. Milliamperage is generally given to patient's tolerance. Place a special triangular-shaped electrode on the cheek just in front of the affected ear, and a larger oval-shaped electrode in back of the ear on the opposite side. If both ears are affected, two treatments are necessary, simply reversing the electrodes. If possible, this treatment should be followed with negative galvanism for 5 minutes.

EMPYEMA

After drainage has been established, apply diathermy. The electrodes are of block tin or mesh, 4x6 inch anterior, and 5x7 inch posterior; milliamperage to skin tolerance. Usual treatment 30 minutes daily. (Use high voltage terminals.)

EPIDIDYMITIS

When treated with diathermy during the first twenty-four hours, it is often possible to abort an epididymitis. Either fasten two small block tin plate electrodes to fit the involved mass, which electrodes are to be connected to the diathermy machine in the usual manner, that is, to the low voltage terminals, or use the No. A1277 Corbus epididymitis clamp electrode as illustrated on page 30.

Operators differ as to the time of treatment; from 20 to 40 minutes daily.

The current employed is generally to the skin tolerance, and the milliamperage is gradually reduced before the current is cut off. (Use low voltage terminals.)

FRACTURES, AFTER TREATMENT OF

The period of disability can be greatly lessened following fractures if diathermy is used. Properly placed electrodes employing milliamperage to tolerance of patient, give splendid results. The cuff method, that is employing a 3-inch cuff of block tin or mesh material below and above the fracture, or the half cuff method anteriorly below and posteriorly above the spot to be treated, will give excellent results. Current employed will vary from 500 to 1200 M.A. The No. A930 clamp electrode affords a splendid means of passing the current directly through the affected area. The treatment time should run not less than 30 minutes. (Use low or high voltage terminals.)

GONORRHEA

The gonococcus can be destroyed by heat at 109° F. During acute respiratory infections in patients suffering with G. C. we often find a total disappearance of the gonococci during the course of the influenza or pneumonia if the patient's temperature exceeds 103° F. 113° F. means almost instant destruction, and it has been proven that at 108° F. the gonococci is destroyed in approximately thirty minutes. Inasmuch as normal tissue will withstand a temperature of at least 120° F. without destruction, a good guide in giving diathermy treatments is the patient's tolerance. Dr. Cumberbatch states that a temperature between 114° and 115° F. is quite safe as well as comfortable for the patient.

The Corbus or Chapman electrodes may be used for the treatment, which you will find catalogued on pages 30 and 31 of this book. The subject of gonorrhea is covered in all of the latest diathermy text books.

HEMORRHOIDS

After having prepared the field of operation and the piles are exposed to view, grasp same with forceps, the jaws of which are covered with rubber tubing. Inject a few drops of 2 per cent novocaine-adrenalin solution underneath the hemorrhoid. An indifferent electrode of 8 inches square is placed under the lower spine. The active electrode is a needle of steel or aluminum, held in an insulated holder. The best setting of your machine will be when the meter reads about 2000 milliamperes on direct short circuit, that is, with the needle touching the indifferent electrode and not through patient.

Insert needle electrode into the pile and continue application until lesion turns steel-gray color. This may require from ½ second to 2 or 3 seconds, and should be watched carefully, as over-coagulation is not desirable. Use antiseptic dressing following the operation. It may be necessary to use a suppository containing opium. It is usually good practice to coagulate one pile at a time. Use foot switch for current control. (Use low voltage terminals.)

PLEURISY

Treatment is quite similar to that advocated for pneumonia on page 24. The mesh electrode is applied to the chest, and the block tin plate on the back. The treatment time will run from 20 to 30 minutes with from 1200 to 1500 milliamperes. If fluid is present, aspirate or drain. (Use high voltage terminals.)

PROSTATITIS

Place patient in dorsal position, or on the side, having knees flexed. The indifferent block tin or mesh electrode, 4x5 inches, well coated with soap lather, is placed over the supra-pubic region; or the autocondensation pad may be employed as the indifferent electrode, if preferred.

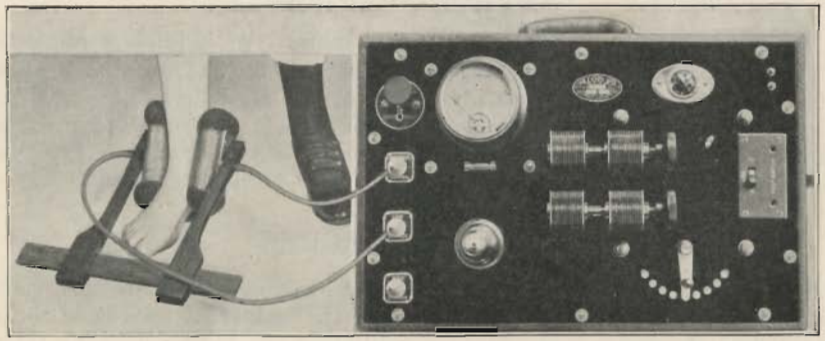
A well lubricated prostatic electrode is introduced slowly, so that the points of greatest soreness are in contact with the metallic surface. It is imperative that the prostatic electrode be held firmly in place. Employ milliamperage to a point just below patient's tolerance, and treat from 30 to 40 minutes. (Use low or high voltage terminals.)

SACROILIAC ARTHRITIS

In these cases the use of diathermy has proven very satisfactory. Good sized electrodes from 5x6 inches to 7x8 inches are employed anteriorly and posteriorly at the hip. The milliamperage is generally increased to the patient's tolerance, and the treatment given for 30 to 40 minutes. (Use high voltage terminals.)

SPRAINS

Diathermy applied to the affected part will lessen absorption, stimulate repair, and will quickly relieve the pain. The milliamperage is increased to the patient's tolerance, and the type and size of the electrode depends on the location of the sprain. Diathermy treatments should be followed with massage where possible. (Use high or low voltage terminals.)



Use of Diathermy Clamp in Treating Sprains

OTITIS MEDIA, CHRONIC

The technic given for "Acute Otitis Media" is also applicable in chronic cases. The therapeutic lamp may be used between treatments for the relief of pain. (Use low or high voltage terminals.)

OVARIAN NEURALGIA

Diathermy is indicated merely for the relief of pain.

OZENA

See technic as given under "Coryza."

PROCTITIS

Shave the perineum, and apply a well soaped mesh sponge electrode to the anus. The large (indifferent) electrode is of block tin, and is coated with a heavy soap lather before placing over abdomen. Use milliamperage to the patient's skin tolerance, and treat for 30 minutes daily. (Use low or high voltage terminals.)

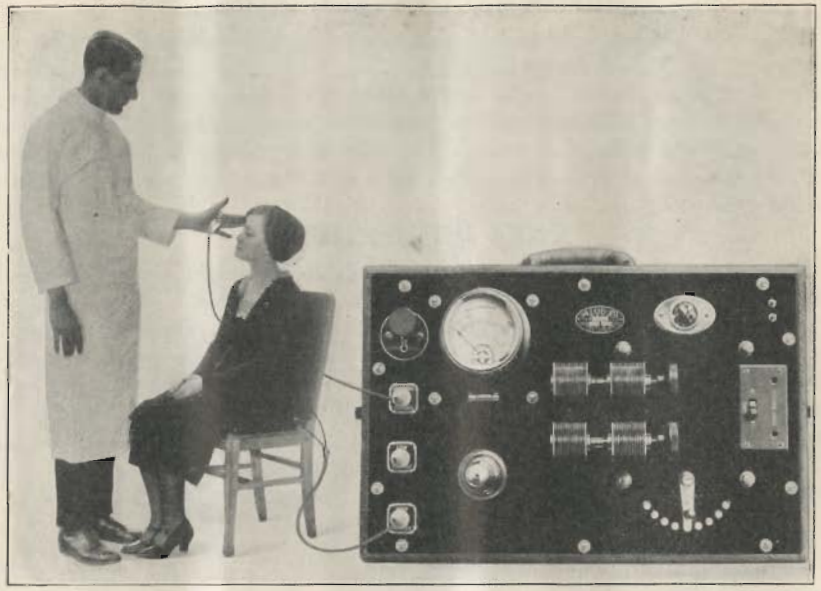
PNEUMONIA

In diathermy we have one of the most effective aids ever offered the profession for the treatment of pneumonia. Diathermy removes tissue congestion, inflammatory products and stasis, increases blood metabolism, opens the lymph channels and relieves pain.

One of the first signs noticed following the application of diathermy in pneumonia cases is that the patient is resting easier, dyspnea is lessened and in the majority of cases the patient will enjoy a restful sleep. If the patient is cyanotic you will soon notice a disappearance of the cyanosis. Treatment with diathermy usually causes pneumonia to end by lysis.

The electrodes employed are generally a piece of block tin or mesh 5x7 inches for use over a single lobe, or in a pneumonia involving two lobes in the same lung, electrodes are employed which are large enough to cover the entire area. The mesh electrode material is preferred by most operators to be used over the chest, because it adapts itself easily to the shape. The posterior electrode is of somewhat larger size than the anterior, and is placed under the back opposite the chest electrode. These electrodes should be warmed and well soaped before applying. A properly applied half-filled sandbag is generally used to hold the chest electrode in place, although adhesive tape may be employed for the purpose.

The milliamperage is increased gradually up to approximately 1600, although the patient's tolerance should be considered, and never more than 50 milliamperes of current per square inch of smallest electrode are to be used. Maximum milliamperage to be maintained for about 30 minutes. The current should be turned off gradually. If the patient is restless, care must be taken that no connections are broken during the treatment. Treatments may be given as much as two or three times in 24 hours, if necessary, and when resolution begins diminish the number of treatments. When applying diathermy to the region of the heart, use lower milliamperage. (Use high voltage terminals.)



Diathermy Treatment of Headache

HEADACHE

Diathermy through the head may be used, employing electrodes of equal size. Indirect diathermy, however, is usually found superior. The patient is placed on the autocondensation pad, which pad is connected to the unipole No. 7, and the current is drawn from the patient's head by using the hand of the operator. The forehead is massaged with the finger tips, and the heating effect may be increased or diminished by using one or more fingers in contact.

HYPERTENSION

The patient holds the autocondensation handle firmly in both hands, and is either seated or permitted to recline on the autocondensation pad. The milliamperage is increased gradually up to about 700. The treatment time should average 30 minutes. Reduce the milliamperage gradually before the current is shut off. (Use high voltage terminals.)

IMPOTENCY

Diathermy is used to good advantage. A metallic electrode of the type designed for prostatic work, is placed in the rectum, and a kidney-shaped block tin electrode measuring approximately 4x6 inches is placed over the pubes. Use 500 milliamperes for 25 to 30 minutes three times a week. (Use high or low voltage terminals.)

IRITIS—ACUTE OR CHRONIC

Place the patient on the autocondensation pad, which pad is to be connected to the highest voltage unipole (No. 7). Apply indirect diathermy using your own fingers as the active electrode. The finger tips are placed in gentle contact with the eye-lids before the current is turned on, to avoid sparking at the point of contact. The treatment should be given for about 10 minutes, and of just sufficient strength that there is a warming sensation at the eye.

KNEE JOINT INJURIES

Start the diathermy treatment immediately to lessen the time of disability and to prevent swelling and edema as far as possible. Never apply the bandages too snugly when applying electrodes; always permit room for expansion of the limb. The No. A930 clamp electrode may be applied directly over the joint, or a 3-inch cuff electrode placed about 4 inches below and 4 inches above the joint, or the half cuff method anteriorly below and posteriorly above. The current will vary from 800 to 1200 M. A. The time about 30 minutes. Massage, after diathermy, is of distinct value before the joint is rebandaged. (Use high voltage terminals.)

LARYNGITIS

Indirect diathermy is indicated as under "Headache," the fingers of the operator being used as the active electrode. Treatment is usually for 30 minutes.

LEUKORRHEA

Diathermy is suitable for treating all catarrhal conditions of the vagina and uterus. The large (indifferent) block tin electrode is placed on the abdomen. Use the Chapman vaginal electrode as the active electrode, and milliamperage sufficient to produce a temperature of about 110° F. in the electrode. Treat for 30 minutes. (Use low or high voltage terminals.)

LUMBAGO

Medical diathermy is used to advantage in this ailment. A good size block tin electrode from 7 to 10 inches square, depending on the size of the patient, is placed over the lumbar region, and a mesh or block tin electrode of the same size, anteriorly. From 1500 to 2000 milliamperes are used according to the tolerance of the patient, and the treatment is given for 30 minutes. (Use high voltage terminals.)

MYOCARDITIS

We have received numerous favorable reports as to the value of medical diathermy in the relief of precordial pain or angina, from physicians who have used it in treating myocarditis. Electrodes: 4x5 inch mesh anteriorly, and block tin posteriorly. Time of treatment 30 minutes. Milliamperage should be gradually increased and gradually decreased, and should not exceed 1000 or 1200 maximum. (Use high voltage terminals.)

MOLES

See technic given for "Warts."

MIGRAINE

Place one electrode over the forehead, and the indifferent electrode over the upper nape of the neck. Increase the current gradually from 300 to 500 milliamperes, treat for 20 minutes and gradually decrease the current before shutting off the machine. (Use low or high voltage terminals.)

NERVE INJURIES, PERIPHERAL

Diathermy is indicated for the relief of pain, and to hasten repair.

NEURITIS

Diathermy is of exceeding value in relieving swelling and edema, and in so doing it prevents pain, assists absorption of exudate, and hastens resolution by causing a marked hyperemia. The type and size of electrodes, method of application, amounts of milliamperage and lengths of treatments will vary with the location of the trouble. (Use low or high voltage terminals.)

NEURITIS (Ulnar Nerve)

Either full cuff electrodes on the upper arm and just above the wrist, or half-cuff electrodes at the same points, one anterior and the other posterior, may be used. 500 to 1000 milliamperes are employed, depending on the patient's tolerance, and the time should run from 20 to 30 minutes each treatment. (Use high voltage terminals.) There is no contra-indication to the treatment of neuritis with diathermy.

NEURALGIA

Diathermy is a valuable aid in the treatment of neuralgia, and results secured are very satisfactory. Treat as often as necessary for the relief of pain, using milliamperage to the tolerance of the patient. The size and style of the electrode used depends entirely upon the location of the neuralgia, and the treatment time should be not less than 25 to 30 minutes. (Use high or low voltage terminals.)

OSTEOMYELITIS

Diathermy is indicated as an aid in the treatment of osteomyelitis. If pus is present, be sure and remove any spicules of bone and then drain. The size of the applicators will depend upon the location and area of the disease.

For osteomyelitis of the femur, for example, use block tin electrodes 3x6 inches or 3x8 inches, held in position with elastic bandage and placed opposite each other on the thigh. Treat for 30 minutes daily, with milliamperage to skin tolerance, usually from 1200 to 1500. The actinic light is indicated in this disease. (Use high voltage terminals.)

OTITIS MEDIA, ACUTE

In acute otitis media, after the drum membrane has been punctured or ruptured, diathermy is a valuable aid. Both the active and indifferent electrodes are block tin, the latter being a great deal larger than the former. Use milliamperage to the patient's tolerance, and treat for 30 minutes. Repeat, if necessary, three times a day, depending upon the rapidity with which the inflammation subsides.